

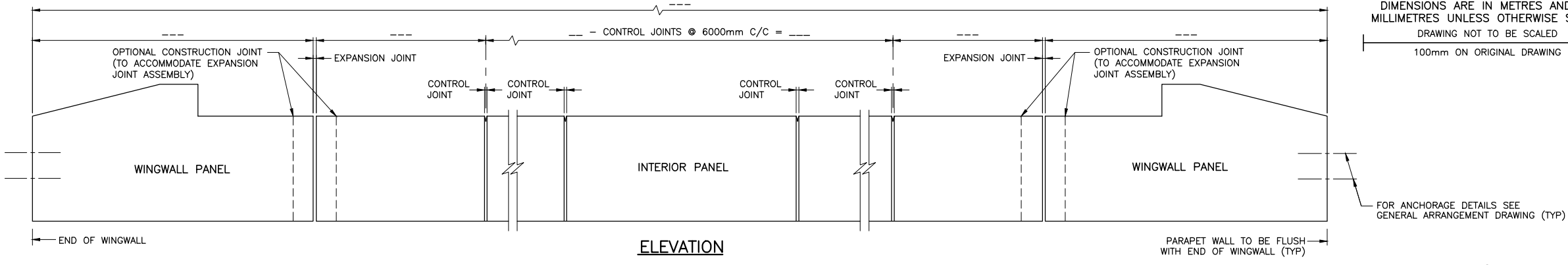
FILE NAME: C:\Users\wzozak\Documents\Bridges\Office\11 CPS Memo and dwg\1 Ready dwg for release\2019\May\110-90 May 2019.dwg
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 MINISTRY OF TRANSPORTATION, ONTARIO

Ministry of Transportation

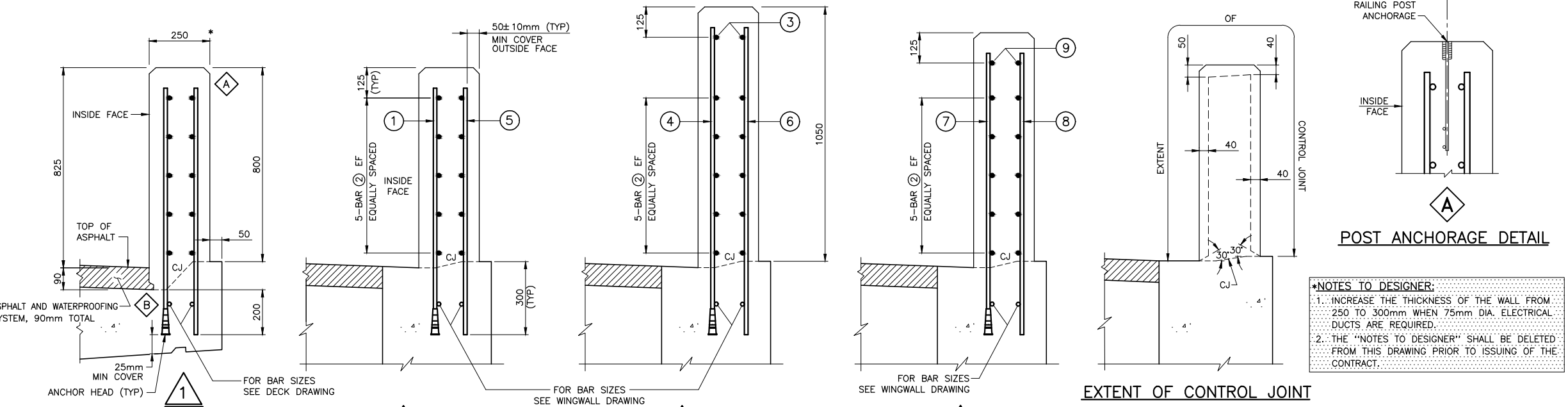
CONT WP
 SHEET

PARAPET WALL WITH RAILING, TL-4 (GFRP REBAR WITH ANCHOR HEAD)

METRIC
 DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN
 DRAWING NOT TO BE SCALED
 100mm ON ORIGINAL DRAWING

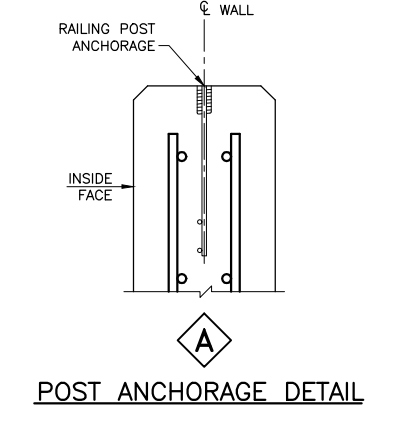


FOR ANCHORAGE DETAILS SEE GENERAL ARRANGEMENT DRAWING (TYP)



***NOTES TO DESIGNER:**

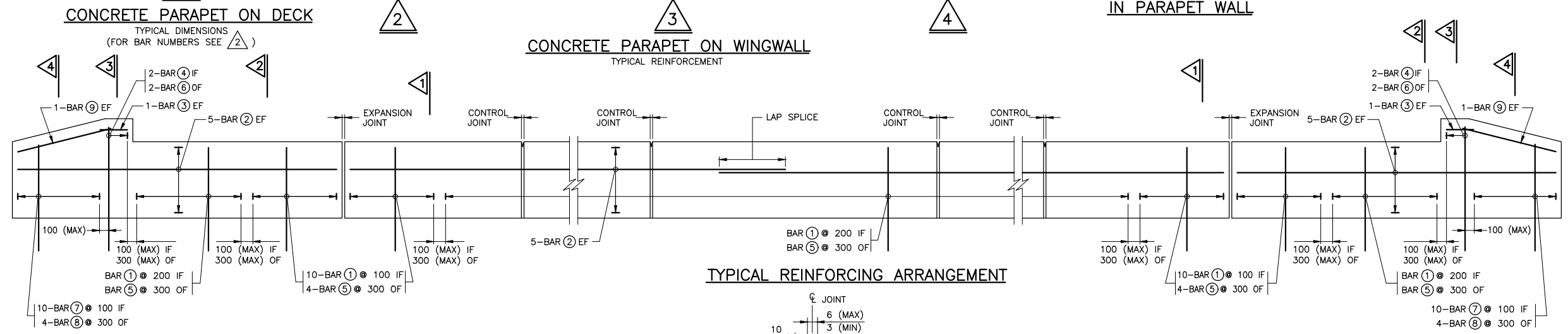
- INCREASE THE THICKNESS OF THE WALL FROM 250 TO 300mm WHEN 75mm DIA. ELECTRICAL DUCTS ARE REQUIRED.
- THE "NOTES TO DESIGNER" SHALL BE DELETED FROM THIS DRAWING PRIOR TO ISSUING OF THE CONTRACT.



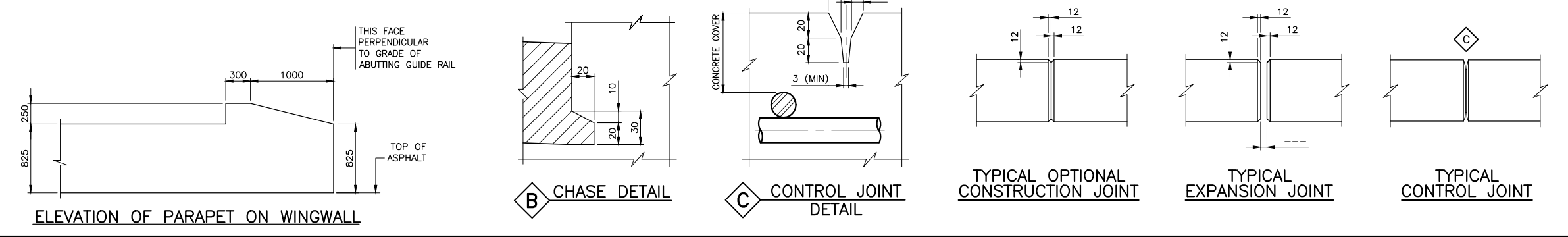
- NOTES:**
- SYSTEM CONFIGURATION MEETS THE REQUIREMENTS OF NCHRP 350.
 - CONCRETE COVER TO REINFORCING BAR 60±10mm EXCEPT AS NOTED.
 - REINFORCING SHALL BE GLASS FIBRE REINFORCED POLYMER (GFRP) GRADE III, SIZE IN THE BAR SCHEDULE INDICATES GFRP GRADE AND DESIGNATED BAR DIAMETER AND SHALL HAVE A NOMINAL CROSS SECTIONAL AREA ACCORDING TO CAN/CSA S-807.
 - ANCHOR HEAD OF GFRP REBAR SHALL HAVE A MINIMUM GUARANTEED PULL OUT STRENGTH (Fp) AS FOLLOWS:
- | SIZE | Fp (kN) |
|--------------------|---------|
| GIII-15M WITH HEAD | 100 |
- BAR LAP SPLICE FOR HORIZONTAL REINFORCEMENT MUST NOT LAP THROUGH CONTROL JOINT.
 - MINIMUM BAR LAP SPLICE TO BE 550mm, UNLESS OTHERWISE SHOWN.
 - LENGTH OF HORIZONTAL BAR TO SUIT CONTRACTOR'S OPERATIONS. BAR LENGTHS NEED NOT MATCH DISTANCE BETWEEN CONTROL JOINTS.
 - CONTROL JOINT TO BE FORMED.
 - SAWCUTS NOT PERMITTED.
 - CONTROL JOINT FORM HARDWARE NOT TO BE LEFT IN PLACE.
 - OPTIONAL CONSTRUCTION JOINTS TO BE LOCATED WITHIN LIMITS OF CONCRETE DAMS ON DECK OR BALLAST WALL.
 - THIS STANDARD DRAWING MAY BE SUBSTITUTED WITH STANDARD DRAWING SS110-59.
 - CHASE REQUIRED ON HIGH AND LOW SIDE OF CROSSFALL.
 - THE CONTRACT ADMINISTRATOR SHALL SELECT SAMPLES, AT RANDOM, FROM EACH GFRP BAR MARK IDENTIFIED WITH AN (*) FOR QUALITY ASSURANCE TESTING AS PER THE SPECIFICATION REQUIREMENTS. THE CONTRACTOR SHALL ALLOW FOR THIS WHEN CALCULATING THE NUMBER OF BARS TO BE DELIVERED TO THE SITE.
 - LEGEND: EF - DENOTES EACH FACE OF - DENOTES OUTSIDE FACE IF - DENOTES INSIDE FACE CJ - CONSTRUCTION JOINT

BAR MARK	SIZE	SHAPE
1*	GIII-15M WITH ANCHOR HEAD	STRAIGHT
2*	GIII-15M	STRAIGHT
3	GIII-15M	STRAIGHT
4	GIII-15M WITH ANCHOR HEAD	STRAIGHT
5*	GIII-13M	STRAIGHT
6	GIII-13M	STRAIGHT
7*	GIII-15M WITH ANCHOR HEAD	STRAIGHT LENGTH VARIES
8	GIII-13M	STRAIGHT LENGTH VARIES
9	GIII-15M	STRAIGHT

(*) SEE NOTE 14.



REFER TO 1.1.8 IN THE STRUCTURAL MANUAL FOR PROFESSIONAL ENGINEER STAMPING REQUIREMENTS.



APPLICABLE STANDARD DRAWINGS:
SS110-21 RAILING FOR BARRIER/PARAPET WALL

STANDARD DRAWING MAY 2019	SS110-90
PARAPET WALL WITH RAILING, TL-4 (GFRP REBAR WITH ANCHOR HEAD)	

REVISIONS		DATE	BY	DESCRIPTION
DESIGN	CHK	CODE	CHBDC-14	LOAD
DRAWN	CHK	SITE		